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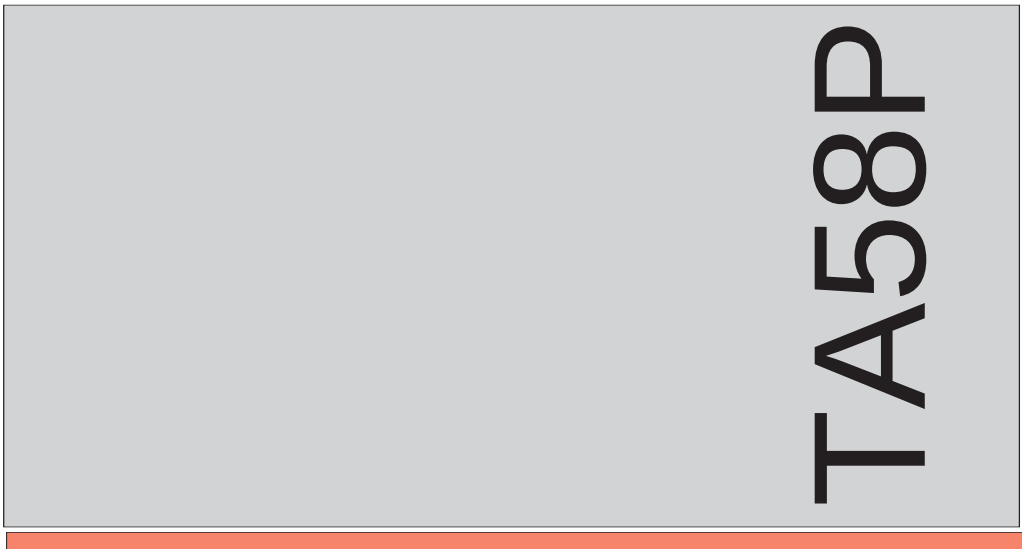

TA58P

POS Keyboard

User Manual

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User Manual

Edition August 2002

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Manufacturer’s Declaration and Approval

General Authorization

This device fulfills the requirements of the EEC directive 89/336/EEC “Electromagnetic Compatibility”.

Therefore, you will find the CE mark on the device or packaging.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Le présent appareil numérique n’émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numériques de la “Class A” prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

User Information

Wincor Nixdorf International GmbH does not accept responsibility for radio and TV interference and faults that are caused by unauthorized changes that have been made to the devices. Furthermore, cables or other devices that have not been approved by Wincor Nixdorf may not be connected to the device. The user is responsible for any faults and interference that are caused as a result.

Repair work on the devices should only be carried out by authorized and specially trained personnel. Improper repairs will lead to the loss of any guarantee and liability claims.

Safety Instructions

Note the following safety information:

- Lay all cables and supply lines so that nobody can tread on them or trip over them.
- Protect the device from dust, moisture and heat.
- Take care to ensure that no foreign objects (e.g. paper clips) or liquids can get into the inside of the device, as this could cause electrical shocks or short circuits.

Cleaning Instructions

The keyboard should be cleaned with a germicide from time to time. Before cleaning in between the keys with a brush, loosen and remove the key caps using the key removing device. Do not allow dust to get in through the open keyboard mechanics.

Scope of supply

The product includes one TA58P keyboard (resp. a universal keyboard and a country-specific set of keys), one User Guide and one accessories kit containing the following:

- 11 * single key caps
- 11 * transparent plates
- blank sheets for labeling
- 1 key cap remover
- 1 diskette for programming the keyboard
- 1 set of keys

The set of keys contains:
Key 1 for key position 1
Key 2 for key positions 1 and 2
Key 3 for key positions 1, 2 and 3
Key 4 for key positions 1, 2, 3 and 4

The following items can be ordered optionally:

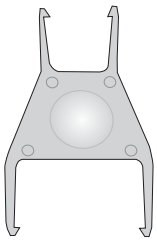
Accessories kit 1:	20 dummy keys (1 x 1)
Accessories kit 2:	6 double key caps
	2 quadruple key caps
Accessories kit 3:	12 single key caps

Depending on your order, the keyboard may have a swipe-card reader.

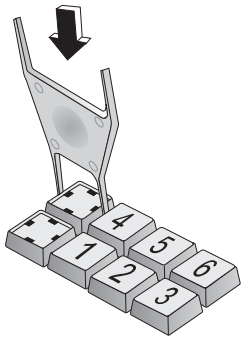
If damage has occurred during shipping or if the package contents do not match the delivery note, promptly notify your Wincor Nixdorf sales outlet.

Mounting keys

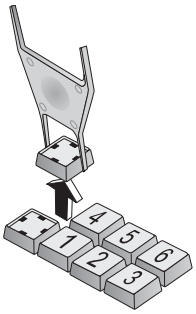
Exchanging the Keys



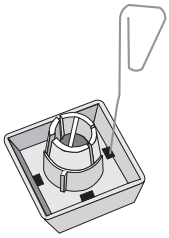
You can remove each of the key caps using the key removal device enclosed, pulling the key upwards.



Place the key removal device on the selected key until you hear a click.



Now remove this key from the keyboard by pulling upwards.

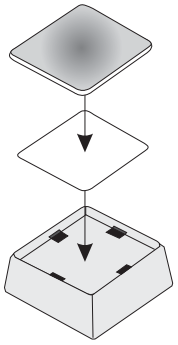


If the key that has been removed has a number or character on it, you can change the lettering as follows:

Using a thin object (e.g. paper-clip etc.), press upwards against the plastic cover through the opening on the underside of the key. Please refer to the next chapter for instructions on how to insert the new label.

Inserting Key Labels

Below, you will find instructions on how to insert the key labels:



Each key should be labelled individually. You can use the empty labels delivered with the system to do so.

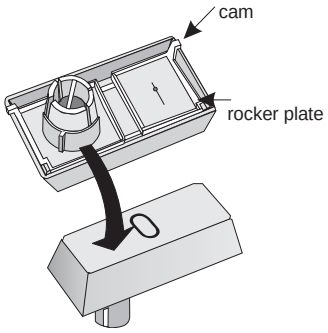
Place the written label on the key cap.

Insert the transparent key cover with the **mat** and **concave** side upwards until it clicks into place in the key cap.

The labels are replaced as follows:

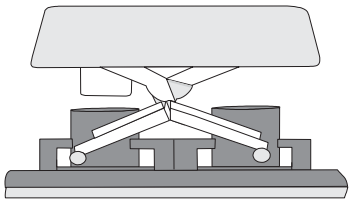
- ❑ Remove the key cap from the keyboard (see removing the key cap) and pull the transparent key cap upwards.
- ❑ The transparent key cover is then released and the label can be removed.
- ❑ Replace the label and fit the transparent key cover (with the mat and concave side facing upwards) back into the key cap.

Inserting Key Caps



Insert the key cap in the keyboard and press firmly into place.

When inserting double or triple keys, please ensure that the guide cylinder is on the left in horizontal resp. on top in vertical position. The quadruple key caps are corresponding - with the guide cylinder arranged on the upper left position.



Ensure when inserting the key caps that the white cam of the rocker plate is in the planned bulge of the keyboard.

If you hear a click, the key caps are inserted correctly.

quadruple key cap with scissors

The TA58P keyboard

General

The TA58P keyboard has a flexible key layout. It contains a numeric and alphanumeric key field comparable with the key field of a PC. In addition to a PC keyboard the TA58P has 36 function keys, which can be used freely.

The TA58P keyboard is equipped with a key switch with 6 switch positions and is available with or without a swipecard reader.

A power-up reset and an automatic self-test are performed each time the POS terminal is switched on. Following these self-tests, the keyboard is ready for operation. The keyboard receives its power from the POS system.

TA58P keyboard without swipecard reader

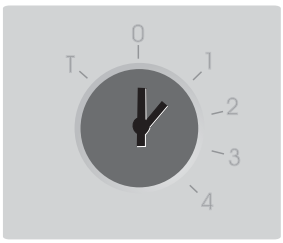
Keypad

In the functional keyfield of the TA58P, two keys can be combined to form a double key and four keys to form a quadruple key, either horizontally or vertically. Only one key code is generated by each double or quadruple key.

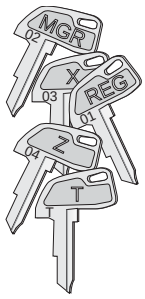
Key caps can be changed on the spot using the key cap remover included in the scope of supply. When using the key caps for multiple keys, note the position of the pin on the underside, making sure that the desired code is set. According to the Wincor Nixdorf Convention the guide cylinder is positioned left (double key horizontal), on the bottom (double key vertical) or on the bottom left (quadruple key).

Key switch

The TA58P keyboard is equipped with a key switch with 6 switch positions. Switch position 0 is the basic position; switch positions 1-4 are provided for customer-specific applications. In positions 0 and 1, the key can be removed.



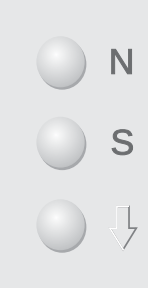
The sixth switch position, which is designated on the lock by T, is intended for use by Field Engineering. From switch position 0, the key provided can be turned to position T only. This key is not included in the scope of supply.



The key switch has only one closure, i.e. there is only one set of keys for all keylocks that includes the above-mentioned key variants for the various switch positions.

LEDs

The TA58P has 3 LEDs:



Num Lock

Shift Lock

Scroll Lock

They are activated or de-activated by the application software.

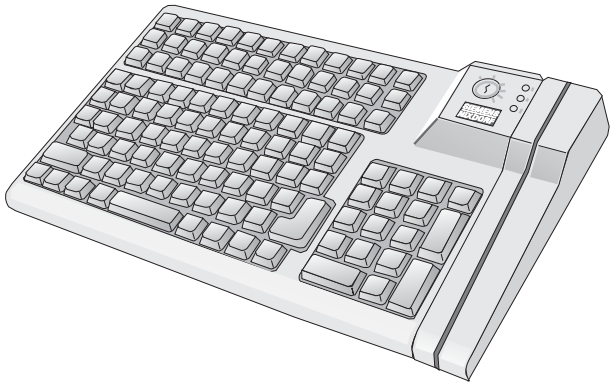
Num Lock
When the LED Num Lock lights up the numerical keypad is active (figures, decimal point and comma) and not the basic level (cursor, “delete” etc.). You can switch between these levels with the NUM key or via software, depending on the operating system.

Shift Lock
When the use of capital letters is activated, this LED lights up. All letters will be output as caps. The other characters are output normally, e.g. numerics.

Scroll Lock
Scrolling is inactive, when this LED lights up. The scrolling function is only used by few software programs.

Swipecard reader (SCR)

The TA58P is optionally equipped with a swipecard reader. It is a separate housing right side of the keys. The SCR is able to read ID-cards.



Using the Swipecard reader

Pull the magnetic card evenly and quickly, from top to bottom, through the slot on the swipecard reader. Make sure that the magnetic stripe isn`t facing the keys.

Note the following precautions when handling magnetic cards:

- Never allow magnetic cards to come into contact with liquids.
- Never bend or fold magnetic cards.
- Never expose magnetic cards to a magnetic field.

Insert the magnetic card in the special slot provided on the reader from the right-hand side only; inserting the card at another location could damage the read heads.

Cleaning Instructions

In order to ensure that the quality of reading results is maintained, clean the swipecard reader at least once a week. To do this, use the special cleaning card that can be ordered from Wincor Nixdorf.

Connection method

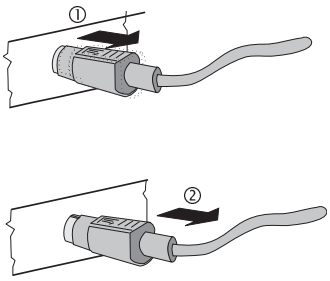
The connector for the keyboard is a standard 6-pin mini-DIN connector. The cable can be ordered optionally as a

- 0.8 m cable,
- 1.5 m cable or
- 3.0 m cable.

Releasing the Cable Connection

Never remove a cable from a connector socket by simply pulling on the cable. Always remove the cable by the connector housing. Please follow the instructions below when removing cables:

- Turn off all switches to the mains and electrical equipment.
- Remove all mains cables from the shockproof sockets installed in the building.
- Loosen all cables on the electrical equipment.



The mini-DIN connectors are left plugged in until unlocked.

Using your thumb, pull gently on plastik connector housing ①, removing the connector from the socket. This unlocks the connector. The metal part of the connector is now visible.

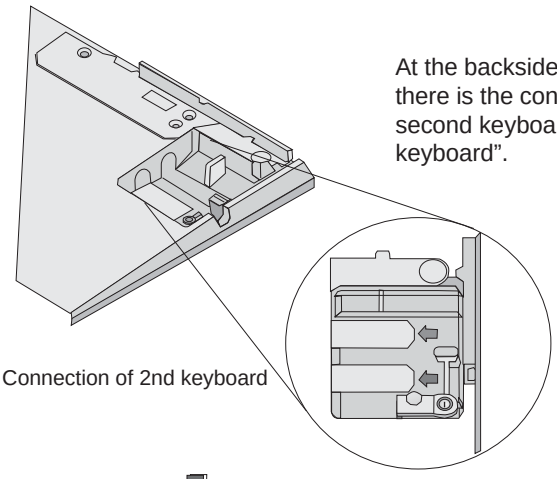
Now remove the connector from the socket ②.

Self-test

A self-test of the keyboard is performed each time the POS terminal is switched on. During this test, the interface to the system is disabled. The system is informed of the successful completion of the test.

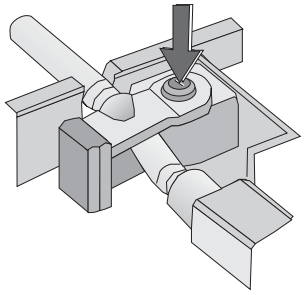
Connecting a 2nd Keyboard to theTA58P

The TA58P has a connection for a second keyboard. This connection allows for example to plug in an additional PC-keyboard for text input. This is necessary, if you want to install a new keyboard. The new keyboard is delivered without keyboard instructions, which must be still created. The mechanism is made by the second keyboard.



Connection of 2nd keyboard

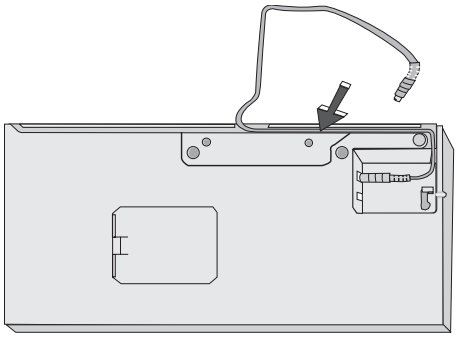
At the backside of the keyboard there is the connection for the second keyboard, marked “second keyboard”.



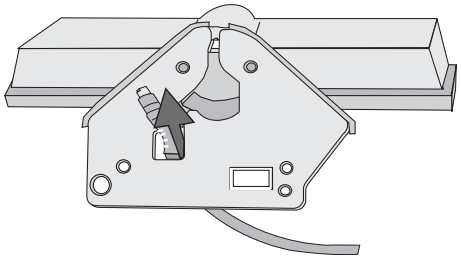
Plug the connector into the 2nd connection and secure the cable in that position with the screw and the metal cover (see picture).

In the case that the connected 2nd keyboard is a POS-keyboard (TA57, TA61, Ta64 or TA85) and that the TA58P uses a magnetic swipe card reader, a central keylock and/or a waiter keylock a simultaneous use of these POS functions on the 2nd keyboard is not allowed. With the TA58P you can only use the 2nd keyboard alternately (and not at the same time with the 1st keyboard!)

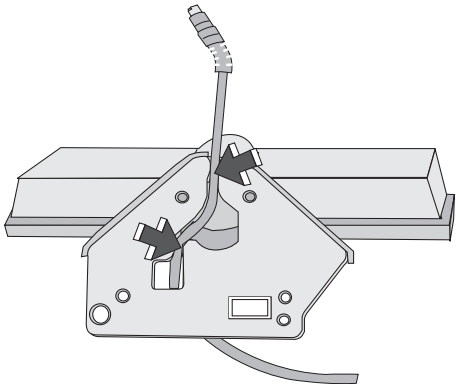
Mounting the BA63/BA66



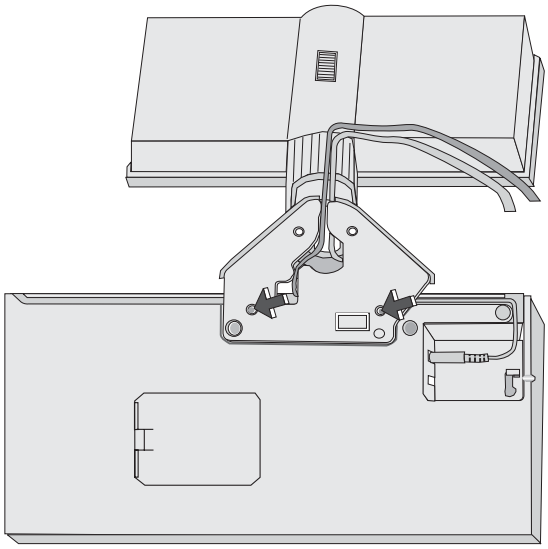
Before installing, make sure that the mains supply has been pulled out. Clip the keyboard cable that is connected to a BEETLE or a PC into the rail at the backside of the keyboard.



Put the keyboard cable through the opening of the foot of the BA63/BA66 (see picture).



Then press the cable at the positions (see picture) into the guidance so that it “disappears”.

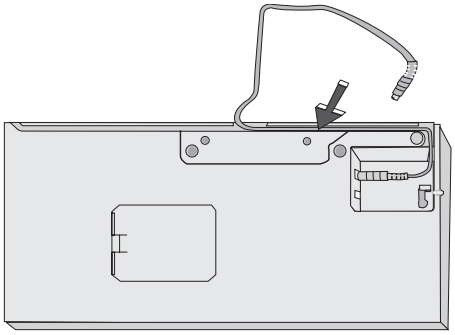


Fasten the BA63/BA66 with the two screws at the keyboard (see arrows).

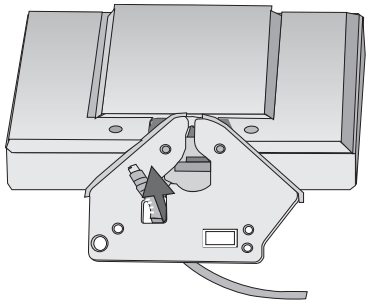
Connect the keyboard cable and the display cable to your BEETLE system and then switch on the power.

Mounting the BA69

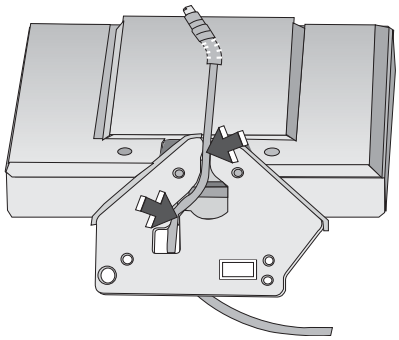
Before installing, make sure that the mains supply has been pulled out.



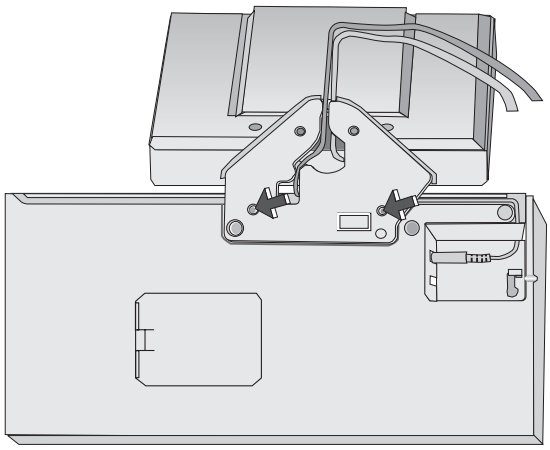
Clip the keyboard cable that is connected to a BEETLE or a PC into the rail at the backside of the keyboard.



Put the keyboard cable through the opening of the foot of the BA69 (see picture).

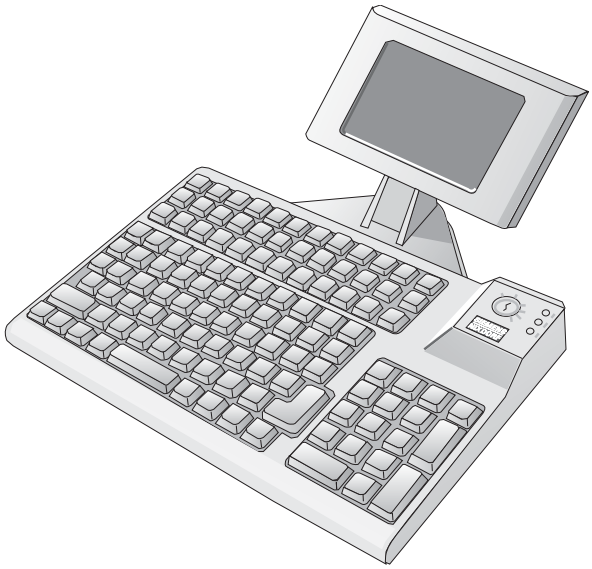


Then press the cable at the positions (see picture) into the guidance so that it “disappears”.



Fasten the BA69 with the two screws at the keyboard (see arrows).

Connect the keyboard cable and the display cable to your BEETLE system and then switch on the power.



Programmable Keyboard TA58P

By programming the TA58P you have the possibility to flexibly adjust the keyboard to your special needs.

- You can design the keyboard layout according to your needs by - for example - moving the numeric block to any place on the keyboard,
- define several levels for the keycodes, thus using the same key as a functional key on one level and for text input on another level,
- port your existing software application with less effort, as you can keep up the key codes.

Files on the Diskette

The TA58P keyboard is delivered with a diskette containing the following files:

KBUTI.EXE	Dialogue utility for programming the keyboard
KBUTIHLP.HLP	Help file for the dialogue utility
SENDKBT.EXE	To send a keyboard table from a file to the keyboard
RCVKBT.EXE	To receive a keyboard table and save it in a file
KB2DEF.EXE	To reset a keyboard to the default state
KBCHKDEF.EXE	To check for default state (default or programmed)
TA58DEF.KBT	Default keyboard table for TA58P
README.TXT	Readme file for programming the keyboards TA58P and TA85P

Programming the keyboards TA58P is described in detail in the Readme file.

Mode

The TA58P keyboard can work in different modes:

“Windows Mode”	This is the default state of the keyboard (not programmed)
“DOS Mode”	This state is used by the Retail Device Interface (RDI), it is entered by rsp. commands from Windows Mode
“Programmed”	In this state a table has been sent to the keyboard and is stored in Flash memory; the table controls what codes are sent for keys and for the components key lock, magnetic stripe reader

Moreover there are mixed modes possible:

“Programmed”	for the keys
“Windows” rsp. “DOS-Modus”	for the components key lock, magnetic stripe reader,

The DOS Mode is primarily used by RDI, the Windows Mode is used by the OPOS components. A description of this protocol can be sent to you by Wincor Nixdorf on request. When developing new software you should generally use the Windows Mode.

Main functions

The dialogue utility KBUTI.EXE serves to:

- programming the codes for the keys and the components key lock, magnetic stripe reader

- send a keyboard table to the keyboard
- receive a table from the keyboard and to store it in a file
- reset a keyboard into its default state, i.e. Windows Mode and default codes for the keys
- check for keyboard state (default or programmed)

So the functionality of the programs

- SENDKBT.EXE
- RCVKBT.EXE
- KB2DEF.EXE
- KBCHKDEF.EXE

is part of the dialogue utility KBUTI.EXE. These 4 programs therefore are intended to be used in conjunction with .BAT files. They return values that can be checked using ERRORLEVEL. You will find the values returned together with an example in the Readme file.

Files containing keyboard tables for TA58P have by convention the extension .KBT.

Keyboard Connection

To program a TA58P keyboard connect it directly to the BEETLE system (or a PC with Mini-DIN connector). This interface is named the primary keyboard interface. A standard PC keyboard or TA57 then is connected to the secondary keyboard interface of the TA58P. So the TA58P has a keyboard wedge, whose inputs are not equivalent. Commands from the

system are sent to the primary interface and may then be transferred to the secondary interface. A reaction of the system to a key stroke is transmitted to the keyboard, which key has been pressed or released.

Help

The dialogue utility KBUTI.EXE has a context sensitive help, which is activated as usual with the F1 key.

Creating Tables

Tables can be created with the utility KBUTI.EXE

- under DOS
- in DOS Mode of Windows 95/98
- in a DOS window of Windows 95/98
- and in a DOS window of Windows NT

Sending and Receiving tables, however, is only possible under DOS or Windows 95/98. The restrictions of Windows NT do not allow it.

The creation of tables request a mouse.

It is possible to define up to 4 keyboard levels. They may be dependent of:

- freely defined level keys (POS Shift levels)
- Ctrl, Alt, AltGr state
- CapsLock and/or ScrollLock state

You can define simple codes, codes in Shift state, key combinations strings built from that like e.g.:

- a
- A
- *
- 00
- {Ctrl+F5}
- {Shift+F8}
- {Alt+F1}
- {Alt+#123}
- {Ctrl+f}{Alt+#240}

For a number of codes symbolic names are available, like F1, .., F12, Shift, Ctrl, Alt, AltGr, Enter, Return, Left, PgUp etc.

Specification of codes not only may be done in symbolic form like above, but also as hexadecimal 8042 scan codes. This, however, is only in a few cases required and will make sense!

Specifying hexadecimal scan codes should be avoided at all, unless there are good reasons! A fairly good knowledge of their structure and all their details is required!

Before programming the following is to be defined:

- Target keyboard TA58P (can not be changed later)
- Keyboard language, e.g. US for USA, GR for Germany etc.

- Type of level selection (none, POS Shift, Ctrl/Alt/AltGr, Caps-Lock/ScrollLock)

Specification of the keyboard language is required to allow the keyboard to deliver such codes, that can be interpreted later correctly by the language keyboard driver for the rsp. country. The target configuration is important, not the configuration at the time when the table is created.

For the codes of the key lock and the data of the various tracks of the swipe card reader and insertion rsp. removal of a waiter key, header and trailer codes can be programmed. This allows the application to distinguish those from normal key strokes.

The codes assigned can be viewed key by key (also with Autoincrement) with the help of KBUTI.EXE. They also can be shown in a more compact form on the screen or for documentation purposes can be written into a file with extension .TXT or directly be sent to a printer (LPT1).

Sending and Receiving Tables

The codes assigned are stored in a file with default extension .KBT. Such files can be loaded by the dialogue utility KBUTI.EXE and the tables sent to the keyboard. They also can be sent directly from such files by the batch utility SENDKBT.EXE. Accordingly KBUTI.EXE may receive a table from the TA58P, which then can be viewed or stored in a .KBT file. This, however, can also be done using RCVKBT.EXE by specifying the file name as a parameter.

During transmission of tables no keyboard activity is allowed, such as be key presses, key position change, or changing state of waiter key, otherwise the transmission may be influenced badly!

Useful Hints

Programming keyboards by tables allows a very flexible keyboard layout. However, one should have some thought about the task of a technician in the field! From logistics point of view it should be ensured that:

- Spare keyboards are delivered always loaded with customer specific tables
- with starting the system the tables are loaded automatically

The batch utilities

- SENDKBT.EXE
- RCVKBT.EXE
- KB2DEF.EXE
- KBCHKDEF.EXE

are provided especially for this situation to allow support of the technicians. However, the programs alone are not helpful for a technician!

Instead they should be available dependent on the solution on disks together with rsp. tables at the site. Also they should be executable with the resources available there!

Take care, that there must not be any keyboard activity when they are executed! This has to be strongly observed, if such a utility is run automatically at start of the system! This at least requires proper error handling rsp. retries in the execution of .BAT files.

Double, Triple, and Quad keys only have a cylindric part responsible for generating the respective code. So it is useful to assign the code to all possible positions covered by a key!

Technical data

Housing dimensions	Footprint: Height:	316mm * 207mm 56mm
Cable length	Optional:	0.8 m, 1.5 m or 3.0 m
Power supply	5V +/- 10%, max. 170 mA	
Protocol	PC AT interface, bidirectional, serial, synchronous	
Connection	2 Mini-DIN connector (6-pin.)	
Keyboard	Keaboard with variable key assignment, two-Key rollover*	
Microprozessor	CMOS-CPUC515A, 12 MHz	
Power-up reset	Yes	
Self-test	Yes	
LEDs	3 (Num Lock, Shift Lock, Scroll Lock)	
Technology	NMOS, CMOS, standard TTL	
Key switch	Switch positions:	5 plus insertion position
Swipecard reader	Number of tracks : Magnetic card coding: Reading rate:	3 to ISO 7811/2 15 to 80cm/s

*Only two keys pressed at the same time are accepted. With the simultaneous operation of more than two keys the third and all further keys are suppressed.

Keyboard Code TA58P

3B 05	3C 06	3D 04	3E 0C	3F 03	40 0B	41 83	42 0A	43 01	44 09	57 78	58 07
2A 3B 12 05	2A3C 12 06	2A3D 12 04	2A 3E 12 0C	2A 3F 12 03	2A 40 12 0B	2A 41 12 83	2A 42 12 04	2A 43 12 01	E0 52 E0 70	E047 E0 6C	E0 49 E0 7D
01 76	2A 44 12 09	2A 57 12 78	2A 58 12 07	1D3B 1405	1D3C 1406	1D3D 1404	1D3E 140C	1D3F 1403	E053 E071	E04F E069	E051 E07A

33 41	34 49	35 4A	27 4C	28 52	1A 54	1B 5B	2B 5D	0C 4E	0D 55	0E 66		45 77	E035 E04A	37 7C	4A 7B
29 0E	02 16	03 1E	04 26	05 25	06 2E	07 36	08 3D	09 3E	0A 46	0B 45		47 6C	48 75	49 7D	4E 79
0F 0D	10 15	11 1D	12 24	13 2D	14 2C	15 35	16 3C	17 43	18 44	19 4D		4B 6B	4C 73	4D 74	4E 79
3A 58	1E 1C	1F 1B	20 23	21 2B	22 34	23 33	24 3B	25 42	26 4B	IC 5A		4F 69	50 72	51 7A	E01C E05A
2A 12	56 61	2C 1A	2D 22	2E 21	2F 2A	30 32	31 31	32 3A	E048 E075	IC 5A		52 70	52 70	53 71	E01C E05A
1D 14	38 11	1D38 1411	*Pos Shift	39 29	39 29		E038 E011	E04B E06B	E050 E072	E04D E074					

Legend

3B	Code INT 15h level (scan code, only make code)
05	Keyboard code (keyboard code, only make code)

The country-specific keyboard codes can be found in the appendix.